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10/557,530	04/10/2007	Brad Bridges	2004P06018WOUS	8813
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K&L Gates LLP			HO, CHUONG T	
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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/557,530	<b>Applicant(s)</b> BRIDGES ET AL.	
	<b>Examiner</b> CHUONG T. HO	<b>Art Unit</b> 2476	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 24 January 2008.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-19 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-19 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)            | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948)    | Paper No(s)/Mail Date. _____                                      |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

### **DETAILED ACTION**

1. The information disclosure statement (IDS) submitted on 11/21/05 was filed. The submission is in compliance with the provisions of 37 CFR 1.97. Accordingly, the information disclosure statement is being considered by the examiner.

### ***Specification***

2. This application does not contain an abstract of the disclosure as required by 37 CFR 1.72(b). An abstract on a separate sheet is required.

### ***Claim Rejections - 35 USC § 101***

1. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Claim 1 is rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.

Claim recites, "A method of upgrading a legacy BPON network, having a legacy BPON OLT and a plurality of legacy BPON ONUs, to facilitate communication between the legacy BPON ONUs and an upgraded GPON OLT, comprising:

installing a converter between the plurality of legacy BPON ONUs and the upgraded GPON OLT;

provisioning the converter and the legacy BPON ONUs to appear in the downstream direction to the upgraded GPON OLT as virtual GPON ONUs; and

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provisioning the converter to appear in the upstream direction to the plurality of legacy BPON ONUs as a virtual BPON OLT ”

Claim 1 is rejected under 35 U.S.C. 101 because they do not fall within one of the four statutory categories of invention. While the claims recite a series of steps or acts to be performed, a statutory "process" under 35 U.S.C. 101 must (1) be tied to another statutory category (such as a manufacture or machine), or (2) transform underlying subject matter (such as an article or material) to a different state or thing. The instant claim neither transform underlying subject matter nor recite structure associated with another statutory category, and therefore do not define a statutory process.

The claim elements "installing, provisioning..."

1) do not tied to another statutory class (such as a particular apparatus) by identifying the apparatus that accomplishes the method steps

2) not structure required by the claim, or positively recited in the body of the claim in association with a step significant to the inventive concept.

A claim reciting an adequate structural tie must positively recite the structure of another statutory category in association with a step significant to the inventive concept. The following are examples of structural recitations that do not constitute adequate structural ties per se: (1) Structure recited in a preamble alone, (2) structure in a phrase expressing intended use or purpose, and (3) structure in a step insignificant to the inventive concept, such as nominal pre or post solution activity.

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Claims 2-6 are also rejected since they are depended upon rejected claim 1 as set forth above

***Claim Rejections - 35 USC § 103***

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1-6, 7-14, 15-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Stiscia et al. (Patent No.: US 7,385,995 B2) in view of Song et al. (Patent No.: US 7,376,136 B2).

Regarding to claim 1, Stiscia '995 disclose a method of upgrading a legacy BPON network (Figure 2, BPON 240) , having a legacy BPON OLT (figure 3, col. 11, lines 18-37, OLT) and a plurality of legacy BPON ONUs (figure 3, col. 11, lines 18-37, ONUs) , to facilitate communication between the legacy BPON ONUs (figure 3, col. 11, lines 18-37, ONUs) and an upgraded PON OLT (figure 2, to / From PON), comprising: installing a convert (figure 2, converters 234, 236 of optical module 230, col. 19, lines 52-60) between the plurality of legacy BPON ONUs (figure 2, BPON 240) and the upgraded PON OLT (figure 2, To / From PON) ; provisioning the converter (figure 2, converters 234, 236 of optical module 230, col. 19, lines 52-60, figure 5, converter) and the legacy BPON ONUs (figure 2, BPON 240) to

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appear in the downstream direction (col. 20, lines 55-60, downstream) to the upgraded PON OLT as virtual PON ONUs; and provisioning the converter (figure 2, converters 234, 236 of optical module 230, col. 19, lines 52-60, figure 5, converter) to appear in the upstream (col. 20, lines 55-60, upstream) direction to the plurality of legacy BPON ONUs (figure 2, BPON 240) as a virtual BPON OLT (col. 14, lines 62-68, virtual OLT).

However, Stiscia '995 are silent to disclose the upgraded GPON OLT.

Song '136, from the same or similar fields of endeavor disclose installing a (Figure 8, (figure 8, GEM TC Adapter)) between the plurality of legacy BPON ONUs (Figure 8, GEM client) and the upgraded GPON OLT (Figure8, GTC Framing Sublayer) (col. 5, lines 27-40, GPON, BPON).

Thus, it would have been obvious to one of ordinary skill in the art at the time of the invention to apply installing the GPON transmission Convergence (GTC) Layer between the plurality of legacy BPON ONUs and the upgraded GPON OLT taught by Song '136 into the system of Stiscia '995; since Song '136 recited the motivation in col. 4, lines 25-30 which is a way capable of transmitting the ONT management control interface has not considered in the GEM protocol (BPON).

Regarding to claim 2, Stiscia '995 disclose connecting the legacy BPON OLT (figure 2, BPON 240) to the converter (figure 2, converters 234, 236 of optical module 230, col. 19, lines 52-60, figure 5, converter) to conduct a learning phase to identify legacy

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ranging data associated with a prior ranging of the legacy BPON OLT (figure 2, BPON 240) and the POT (figure 2, To / From POT).

However, Stiscia '995 are silent to disclose the plurality of legacy of BPON ONUs.

Song '136 from the same or similar fields of endeavor disclose the legacy PON ONUs to appear in the downstream direction to the upgraded PON (col. 6, lines 35-40, downstream).

Thus, it would have been obvious to one of ordinary skill in the art at the time of the invention to apply the plurality of legacy of BPON ONUs taught by Song '136 into the system of Stiscia '995; since Song '136 recited the motivation in col. 4, lines 25-30 which is a way capable of transmitting the ONT management control interface has not considered in the GEM protocol (BPON).

Regarding to claim 3, Stiscia '995 disclose wherein the learning phase includes the step of identifying and storing legacy ranging data from a PLOAM cell (Figure 8, col. 25, lines 5-20, PLOAM cell).

Regarding to claim 4, Stiscia '995 disclose disconnecting the legacy BPON OLT (figure 2, BPON 240) from the converter (figure 2, converters 234, 236 of optical module 230, col. 19, lines 52-60, figure 5, converter) alter the learning phase

Regarding to claim 5, Stiscia '995 disclose converting, by the converter (figure 2, converters 234, 236 of optical module 230, col. 19, lines 52-60, figure 5, converter) ,

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transmissions in the upstream direction from a BPON format (BPON 240) to a PON format and converting, by the converter (figure 2, converters 234, 236 of optical module 230, col. 19, lines 52-60, figure 5, converter) , transmission in the downstream direction from the PON format to the BPON format.

However, Stiscia '995 are silent to disclose GPON.

Song '136 from the same or similar fields of endeavor disclose the legacy PON ONUs to appear in the downstream direction to the upgraded PON (col. 6, lines 35-40, downstream).

Thus, it would have been obvious to one of ordinary skill in the art at the time of the invention to apply the plurality of legacy of BPON ONUs taught by Song '136 into the system of Stiscia '995; since Song '136 recited the motivation in col. 4, lines 25-30 which is a way capable of transmitting the ONT management control interface has not considered in the GEM protocol (BPON).

Regarding to claim 6, Stiscia '995 disclose wherein the step of converting (figure 2, converters 234, 236 of optical module 230, col. 19, lines 52-60, figure 5, converter) includes transferring, by the converter, ATM cells from a payload of an upstream BPON transmission to an ATM payload section of an upstream PON transmission. However, Stiscia '995 are silent to disclose GPON.

Song '136 from the same or similar fields of endeavor disclose the legacy PON ONUs to appear in the downstream direction to the upgraded PON (col. 6, lines 35-40, downstream).



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Thus, it would have been obvious to one of ordinary skill in the art at the time of the invention to apply the plurality of legacy of BPON ONUs taught by Song '136 into the system of Stiscia '995; since Song '136 recited the motivation in col. 4, lines 25-30 which is a way capable of transmitting the ONT management control interface has not considered in the GEM protocol (BPON).

Regarding to claim 7, Stiscia '995 disclose a converter for facilitatting communication between a plurality of legacy BPON ONUs (figure 2, col. 11, lines 18-37, BPON ONUs) and a upgraded PON OLT (figure 2, To / From PON) , comprsing a central processing unit (Figure 3, Voice Processing 330) , a memory (Figure 3, Memory 304) , and a queue (figure 3, APON 250, Network Protocol Module 320) for storing and processing data transmitted and received by the converter (figure 2, figure 3,converters 234, 236 of optical module 230, col. 19, lines 52-60, figure 5, converter); a BPON transceiver for transmitting and receiving BPON flames between the converter and the legacy BPON ONUs; a BPON MAC (figure 2, BPON, col. 11, lines 55, col. 12, lines 57, MAC layer) for processing the BPON frames transmitted to and received from the legacy BPON ONUs (col. 11. lines 50-60, processing the BPON frames from ONUs) ; and a converter (figure 2, figure 3, converters 234, 236 of optical module 230, col. 19, lines 52-60, figure 5, converter) managed entity and a plurality of ONU managed entities for storing and manipulating parameters related to the management of the legacy BPON

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(figure 2, BPON 240) ONUs and the upgraded PON (figure 2, To/From PON) OLT (figure 2, col. 19, lines 53-60, converters of the optical module 230) .

However, Stiscia '995 are silent to disclosing GPON OLT.

Song '136 from the same or similar fields of endeavor disclose the legacy PON ONUs to appear in the downstream direction to the upgraded PON (col. 6, lines 35-40, downstream).

Thus, it would have been obvious to one of ordinary skill in the art at the time of the invention to apply the plurality of legacy of BPON ONUs taught by Song '136 into the system of Stiscia '995; since Song '136 recited the motivation in col. 4, lines 25-30 which is a way capable of transmitting the ONT management control interface has not considered in the GEM protocol (BPON).

Regarding to claim 8, Stiscia '995 disclose the limitations of claim 7 above.

However, Stiscia '995 are silent to disclosing a GPON transceiver for transmitting and receiving GPON frames between the converter and a GPON OLT, and a GPON MAC for processing the GPON frames transmitted and received by the converter.

Song '136 from the same or similar fields of endeavor disclose a GPON transceiver (figure 8, GPON Transmission Convergence (GTC) Layer) for transmitting and receiving GPON frames between the converter (GEM TC Adapter) and a GPON OLT, and a GPON MAC for processing the GPON frames transmitted and received by the converter (figure 8, GEM TC Adapter).

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Thus, it would have been obvious to one of ordinary skill in the art at the time of the invention to apply the plurality of legacy of BPON ONUs taught by Song '136 into the system of Stiscia '995; since Song '136 recited the motivation in col. 4, lines 25-30 which is a way capable of transmitting the ONT management control interface has not considered in the GEM protocol (BPON).

Regarding to claim 9, Stiscia '995 disclose the limitations of claim 8 above.

However, Stiscia '995 are silent to disclose a BPON transceiver for receiving BPON frames from a BPON OLT for conducting a learning phase, and a BPON MAC for processing BPON frames received by the converter from the BPON OLT

Song '136 from the same or similar fields of endeavor disclose a BPON transceiver for receiving BPON frames (figure 8, GEM frames) from a BPON OLT for conducting a learning phase, and a BPON MAC for processing BPON frames received by the converter (figure 8, GEM TC Adapter) from the BPON OLT.

Thus, it would have been obvious to one of ordinary skill in the art at the time of the invention to apply the plurality of legacy of BPON ONUs taught by Song '136 into the system of Stiscia '995; since Song '136 recited the motivation in col. 4, lines 25-30 which is a way capable of transmitting the ONT management control interface has not considered in the GEM protocol (BPON).

Regarding to claim 10, Stiscia '995 disclose the limitations of claim 9 above.

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However, Stiscia '995 are silent to disclose wherein the learning phase includes monitoring, by the converter, transmission between the legacy BPON ONUs and the legacy BPON OLT to identify legacy ranging data for use in ranging the legacy BPON ONUs

Song '136 from the same or similar fields of endeavor disclose wherein the learning phase includes monitoring, by the converter (figure 8, GEM TC Adapter) , transmission between the legacy BPON ONUs (figure 8, GEM Client 130) and the legacy BPON OLT to identify legacy ranging data for use in ranging the legacy BPON ONUs.

Thus, it would have been obvious to one of ordinary skill in the art at the time of the invention to apply the plurality of legacy of BPON ONUs taught by Song '136 into the system of Stiscia '995; since Song '136 recited the motivation in col. 4, lines 25-30 which is a way capable of transmitting the ONT management control interface has not considered in the GEM protocol (BPON).

Regarding to claim 11, Stiscia '995 disclose the limitations of claim 10 above.

However, Stiscia '995 are silent to disclose an unbalanced splitter connected downstream from the GPON OLT for splitting transmissions between the converter and an upgraded GPON ODN.

Song '136 from the same or similar fields of endeavor disclose an unbalanced splitter connected downstream from the GPON OLT for splitting transmissions between the converter and an upgraded GPON ODN (col. 8, lines 5-18).

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Thus, it would have been obvious to one of ordinary skill in the art at the time of the invention to apply the plurality of legacy of BPON ONUs taught by Song '136 into the system of Stiscia '995; since Song '136 recited the motivation in col. 4, lines 25-30 which is a way capable of transmitting the ONT management control interface has not considered in the GEM protocol (BPON).

Regarding to claim 12, Stiscia '995 disclose the limitations of claim 7 above.

However, Stiscia '995 are silent to disclose wherein the converter is co-located with the new GPON OLT and is configured to have direct access to the backplane of the GPON OLT.

Song '136 from the same or similar fields of endeavor disclose wherein the converter (figure 8, GEM TC ADAPTER) is co-located with the new GPON OLT and is configured to have direct access to the backplane of the GPON OLT (col. 8, lines 5-18).

Thus, it would have been obvious to one of ordinary skill in the art at the time of the invention to apply the plurality of legacy of BPON ONUs taught by Song '136 into the system of Stiscia '995; since Song '136 recited the motivation in col. 4, lines 25-30 which is a way capable of transmitting the ONT management control interface has not considered in the GEM protocol (BPON).

Regarding to claim 13, Stiscia '995 disclose the limitations of claim 12 above.

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However, Stiscia '995 are silent to disclose wherein the converter acts on downstream transmission before the transmissions are formatted as GPON transmissions.

Song '136 from the same or similar fields of endeavor disclose wherein the converter (figure 8, GPON transmission convergence (GTC) Layer) acts on downstream transmission before the transmissions are formatted as GPON transmissions (col. 8, lines 5-18).

Thus, it would have been obvious to one of ordinary skill in the art at the time of the invention to apply the plurality of legacy of BPON ONUs taught by Song '136 into the system of Stiscia '995; since Song '136 recited the motivation in col. 4, lines 25-30 which is a way capable of transmitting the ONT management control interface has not considered in the GEM protocol (BPON).

Regarding to claim 14, Stiscia '995 disclose the limitations of claim 7 above.

However, Stiscia '995 are silent to disclose wherein the converter is coupled to a SAR unit for segmenting and reassembling transmissions between the legacy BPON ONUs and the new GPON OLT to convert the transmission between a ATM format and a GPON GEM frame format.

Song '136 from the same or similar fields of endeavor disclose wherein the converter (figure 8, GPON Transmission Convergence (GTC) Layer comprises ATM ADAPTER is coupled to a SAR unit for segmenting and reassembling transmissions

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between the legacy BPON ONUs and the new GPON OLT to convert the transmission between a ATM format and a GPON GEM frame format (col. 8, lines 5-18).

Thus, it would have been obvious to one of ordinary skill in the art at the time of the invention to apply the plurality of legacy of BPON ONUs taught by Song '136 into the system of Stiscia '995; since Song '136 recited the motivation in col. 4, lines 25-30 which is a way capable of transmitting the ONT management control interface has not considered in the GEM protocol (BPON).

Regarding to claim 15, Stiscia '995 disclose a method of ranging an upgraded PON OLT (figure 2, To / From PON) with a converter (figure 2, figure 3,converters 234, 236 of optical module 230, col. 19, lines 52-60, figure 5, converter) and a BPON 240, comprising the steps of:

installing the converter (figure 2, figure 3,converters 234, 236 of optical module 230, col. 19, lines 52-60, figure 5, converter) between the legacy BPON 240 and a legacy PON OLT (figure 2, To / From PON) ; monitoring, by the converter (figure 2, figure 3,converters 234, 236 of optical module 230, col. 19, lines 52-60, figure 5, converter), transmission between the legacy PON OLT (figure 2, To / From PON) and the legacy BPON 234 to identify legacy ranging data (col. 9, lines 35-40, ranging/ upstream time slot) in the transmissions related to a prior ranging of the legacy BPON 234 with the legacy PON OLT; and

storing, by the converter (figure 2, figure 3,converters 234, 236 of optical module 230,

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col. 19, lines 52-60, figure 5, converter), the legacy ranging data m facilitate the ranging of the legacy BPON 240 (figure 3, APON 250, Network Protocol Module 320 storing the ranging data to facilitate the ranging of the BPON 240).

However, Stiscia '995 are silent to disclosing installing the converter between the legacy PON ONUs and the a legacy PON OLT.

Song '136 from the same or similar fields of endeavor disclose installing the (figure 8, GPON Transmission Convergence (GTC) Layer comprises GEM ADAPTER, ATM ADAPTER) between the legacy PON ONUs and the a legacy PON OLT (col. 6, lines 35-40).

Thus, it would have been obvious to one of ordinary skill in the art at the time of the invention to apply installing the GPON transmission Convergence (GTC) Layer between the plurality of legacy BPON ONUs and the upgraded GPON OLT taught by Song '136 into the system of Stiscia '995; since Song '136 recited the motivation in col. 4, lines 25-30 which is a way capable of transmitting the ONT management control interface has not considered in the GEM protocol (BPON).

Regarding to claim 16, Stiscia '995 disclose a transparent mode in which the converter (figure 2, figure 3,converters 234, 236 of optical module 230, col. 19, lines 52-60, figure 5, converter) resides transparently between the legacy BPON 240 and the legacy PON OLT (figure 3, To / From PON) to confirm that transmission between the legacy BPON 240 and the legacy PON OLT (figure 3, To / From PON) continue unaffected by the



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installation of the converter (figure 2, figure 3, converters 234, 236 of optical module 230, col. 19, lines 52-60, figure 5, converter).

However, Stiscia '995 are silent to disclose the converter resides transparently between the legacy PON ONUs and the legacy PON OLT.

Song '136 from the same or similar fields of endeavor disclose installing the (figure 8, GPON Transmission Convergence (GTC) Layer comprises GEM ADAPTER, ATM ADAPTER) between the legacy PON ONUs and the a legacy PON OLT (col. 6, lines 35-40).

Thus, it would have been obvious to one of ordinary skill in the art at the time of the invention to apply installing the GPON transmission Convergence (GTC) Layer between the plurality of legacy BPON ONUs and the upgraded GPON OLT taught by Song '136 into the system of Stiscia '995; since Song '136 recited the motivation in col. 4, lines 25-30 which is a way capable of transmitting the ONT management control interface has not considered in the GEM protocol (BPON).

Regarding to claim 17, Stiscia '995 disclose wherein the step of monitoring further comprises identifying and storing data from a PLOAM cell transmitted between the legacy BPON 240 and the legacy PON OLT (figure 8, PLOAM cells) (col. 25, lines 4-19).

However, Stiscia '995 are silent to disclose PON ONUs.

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Song '136 from the same or similar fields of endeavor disclose installing the (figure 8, GPON Transmission Convergence (GTC) Layer comprises GEM ADAPTER, ATM ADAPTER) between the legacy PON ONUs and the a legacy PON OLT (col. 6, lines 35-40).

Thus, it would have been obvious to one of ordinary skill in the art at the time of the invention to apply installing the GPON transmission Convergence (GTC) Layer between the plurality of legacy BPON ONUs and the upgraded GPON OLT taught by Song '136 into the system of Stiscia '995; since Song '136 recited the motivation in col. 4, lines 25-30 which is a way capable of transmitting the ONT management control interface has not considered in the GEM protocol (BPON).

Regarding to claim 18, Stiscia '995 disclose further comprising disconnecting the legacy PON OLT and beginning a bridge mode in which the converter converts transmissions in the upstream direction from a legacy PON format to an upgraded PON format and converts transmissions in the downs stream direction from the upgraded PON format to the legacy PON format (figure 2, figure 3,converters 234, 236 of optical module 230, col. 19, lines 52-60, figure 5, converter).

Regarding to claim 19, Stiscia '995 disclose provisioning the converter (figure 2, figure 3,converters 234, 236 of optical module 230, col. 19, lines 52-60, figure 5, converter) and the legacy BPON 240 to appear in the downstream direction to the upgraded PON OLT (figure 2, To / From PON) as virtual upgraded BPON 240 and provisioning the

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converter (figure 2, figure 3, converters 234, 236 of optical module 230, col. 19, lines 52-60, figure 5, converter) to appear in the upstream direction to the legacy BPON 240 as the legacy PON OLT (figure 2, To / From PON).

However, Stiscia '995 are silent to disclose the legacy PON ONUs to appear in the downstream direction to the upgraded PON OLT.

Song '136 from the same or similar fields of endeavor disclose the legacy PON ONUs to appear in the downstream direction to the upgraded PON OLT (col. 6, lines 35-40, downstream).

Thus, it would have been obvious to one of ordinary skill in the art at the time of the invention to apply the legacy PON ONUs to appear in the downstream direction to the upgraded PON OLT taught by Song '136 into the system of Stiscia '995; since Song '136 recited the motivation in col. 4, lines 25-30 which is a way capable of transmitting the ONT management control interface has not considered in the GEM protocol (BPON).

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to CHUONG T. HO whose telephone number is (571)272-3133. The examiner can normally be reached on 8:00 am to 4:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Sheikh Ayaz can be reached on (571) 272-3795. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Chuong. T. Ho./  
Examiner, Art Unit 2476